DOCUMENT RESUME

ED 098 953 IR 001 332

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TITLE The Use of the Audio-tutorial System as a Model to Improve Instruction in Public Junior Colleges.
PUB DATE Nov 74
NOTE 7p.

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS *College Teachers; Community Colleges; Consortia; Individualized Instruction; *Instructional Design; Instructional Materials; *Junior Colleges; Models; *Multimedia Instruction; Phonotape Recordings; *Summer Institutes; Teaching Methods
IDENTIFIERS *Audio Tutorial Instruction; Indiana; Vincennes University

ABSTRACT

The audiotutorial approach of individualized and multimedia instruction was used as a model to train junior college faculty in the techniques of designing and developing instructional materials. Three two-week summer institutes were conducted at Vincennes University (Indiana) for a consortium of 10 junior and community colleges in Indiana, Illinois, Michigan, and Kentucky. (Author/WH)

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THE USE OF THE AUDIO-TUTORIAL SYSTEM AS A MODEL TO IMPROVE INSTRUCTION IN PUBLIC JUNIOR COLLEGES

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Introduction

The Audio-Tutorial Approach has been used effectively as a model for training junior college faculty members to design and develop instructional materials. Through the Education Professions Development Act (EPDA) a grant was obtained to conduct three two-week summer institutes on the campus of Vincennes University (a public junior college in Indiana). The institutes conducted during the summer of 1972, 1973 and 1974 were designed to inform in-service junior college instructors about the application of behavioral objectives, the systems approach and other instructional techniques. The program was funded for, and limited to a consortium of ten junior and community colleges in Michigan, Illinois, Indiana and Kentucky.

Objectives

The overall objectives for the EPDA-sponsored project, which included three summer institutes and associated follow-up activites, were to enable each participant to:

1) Develop techniques for cooperative writing of behavioral objectives for their courses.
2) Design and implement instructional materials and techniques based upon objectives to improve their students' learning.
3) Select and utilize the types of media and materials needed for mastery of their stated objectives.
4) Establish a program for measuring the effectiveness of their instructional materials and techniques.
5) Organize the instructional process to accomodate students of widely varying abilities and backgrounds.

The major focus of the two-week summer institues was to help teachers develop skills in producing self-instructional materials. Some of the specific objectives were for each participant to:

1) Design and develop two units of instruction each requiring a student about one hour to complete.
2) Write performance objectives for each unit.
3) Construct appropriate criterion items to measure student achievement of the stated objectives.
4) Develop student practice activities within the unit.
5) Conduct a simulated student tryout using appropriate procedures for collecting revision data.
6) Evaluate their own and other participants' materials as to probable effectiveness with students.

Presented at the Sixth Annual Audio-Tutorial Congress Conference, San Francisco, California, November 7, 1974.

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The Audio-Tutorial Model

As a means of meeting these objectives, it was decided to use the Audio-Tutorial System as a model. The A-T System was developed by S. N. Postlethwait of Purdue University who was co-director of the EPDA program. The System is based upon the following principles described in The Audio-Tutorial Approach to Learning:[1]

1) "Repetition -- A good educational vehicle would permit the learner to adjust the amount of repetition to his individual needs."

2) "Concentration -- A realistic approach would provide a situation in which worthwhile information is presented only when the student is alert and receptive."

3) "Association -- A well-structured educational system would provide materials with important points associated with appropriately related items."

4) "Unit Steps -- The program should have the added feature of allowing the student to adjust the size of the unit to his intellectual capacity."

5) "Use of the Communication Vehicle (Media) Appropriate to the Objective -- One cannot use a single communication vehicle to provide students a full range of experiences."

6) "Use of a Multiplicity of Approach -- One would permit students to pursue any appropriate avenue to accomplish the objective."

7) "Use of an Integrated Experience Approach -- The system sequences and programs learning activities appropriate to the objectives."

In general, the Audio-Tutorial Approach focuses on the learner and actively involves the student, uses explicit learning goals or objectives, and provides a systematic approach to learning. The above principles were used in conducting the summer institutes and the participants were instructed how to apply these principles to their own teaching as well as how to develop materials using the A-T approach.

Personnel

The project was co-directed by Dr. Postlethwait and Dr. James Russell of the Minicourse Development Project at Purdue University. An interdisciplinary approach was provided through the staff which included a professor of biology, an assistant professor of education, a former dean who had returned to teaching at the junior college level, a social studies teacher from one of the participating community colleges, and a doctoral student in English Education with a background in individualized instruction in English. All of the staff had had extensive experience in developing Audio-Tutorial materials and in a variety of fields, namely biology, nursing, education, earth science, social studies and language arts.

Three different staff members from each of the ten participating institutions were selected to attend the institute each summer. Most of the participants had never created their own teaching materials before the summer institutes. Most of the follow-up activities were open to all the staff members of the participating institutions since they were conducted on the local campuses.

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[1]S.N. Postlethwait, J. Novak and H.T. Murray. The Audio-Tutorial Approach to Learning. Burgess, Minneapolis, 1972, pp. 3-6.

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Procedures

The summer institutes were designed to involve thirty different participants each summer. The schedule of activities for the two-week institutes permitted each participant to develop two self-instructional minicourses following the Minicourse Development Sequence for producing Audio-Tutorial materials. (See Figure 1)

A checklist was developed to provide an overview of the procedures the participants were to follow in developing their materials. (See Figure 2) The checklist also allowed the staff to monitor the progress of each participant. Suggested "due dates"were established for each step, so both the participants and the staff knew if they were on target.

The schedule for the first week of the 1974 institute is shown in Figure 3. The schedule shows the variety of activities that were provided. The second week each participant developed an additional minicourse with less guidance from the staff and less structure as to the devlopment sequence. It gave each participant a chance to see what worked best for him as an individual. However, the staff was available to provide assistance when they could. The first week provided a demonstration of the techniques and direct assistance by the staff in producing a minicourse. During the second week the staff provided the necessary prompts and more indirect assistance in order to enable each participant to develop materials on his own when he returned to his home institution.

Follow-Up Activities

Follow-up activities were conducted at each of the ten participating junior colleges. The consultant visits, workshops and other activites were designed to build upon and strengthen the knowledge, skills and attitudes developed during the two-week institutes. The follow-up activities were usually requested by and designed with the assistance of the participants and administrators from that particular school. In addition to providing further instruction and assistance for the participants, the ideas and procedures were disseminated to other faculty members of the ten community colleges in the consortium.

Evaluation

Evaluation was a continuous part of the institutes, providing feedback to both the staff and the participants. Informal evaluations were conducted by the staff each day. The progress of each participant was reviewed by the staff at a nightly staff meeting. Written evaluations were done by each participant at the end of the first week and at the conclusion of the institute. Overall, the institutes were rated as above average by all of the participants. With a few exceptions each participant developed two minicourses that were rated by the staff as good to excellent.

A post-institute evaluation was conducted by an external team (not including any staff members) headed by Dr. Terry O'Bannion of the University of Illinois. The external evaluation included site visits to all ten junior colleges in the consortium and interviews with most of the participants. The evaluations indicated that the procedure of presenting a model for instructional development (the Audio-Tutorial System) based upon behavioral objectives, actively involving the participants rather than lecturing at them and providing for individualized follow-up activities at the participants' home institutions was a very effective technique for improving instruction in public community and junior colleges.

MINICOURSE DEVELOPMENT SEQUENCE

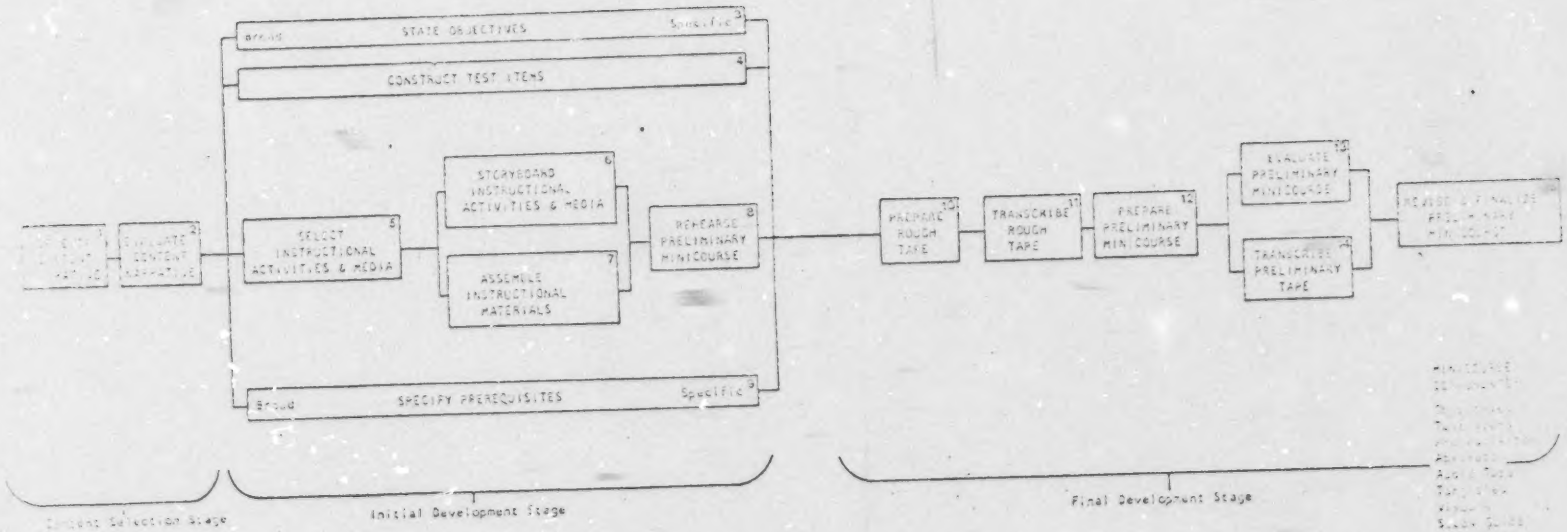

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Figure 1

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E.P.D.A. SUMMER INSTITUTE PROCEDURES CHECKLIST FOR DEVELOPING AUDIO-TUTORIAL MINICOURSES

S.N. Postlethwait and James D. Russell
Vincennes University, 1973

1. Determine topic, level and approximate length.
2. Procure or prepare content narrative.
3. Prepare a list of important unifying themes or questions to be emphasized during the students' study. Put each idea on a separate 3x5 card to be used during storyboarding.
4. Search out available materials - models, films, film strips, experiments, specimens, photographs, sounds, articles, diagrams, data, 2x2 slides, etc., which might be used in developing your topic. (BRING THEM WITH YOU.)
5. Storyboard important themes and questions with some other participants and at least one instructor.
6. Prepare a set of objectives and a set of test questions -- each objective and question on a separate card.
7. Assemble learning materials and, sitting among them, identify all activities which you may use to "involve the student". Describe each on a color-coded card.
8. Storyboard activities with several participants and at least one instructor. Arrive at a preliminary sequence of activities for the minicourse. (These should answer major questions arrived at above and enable the student to meet your objectives.)
9. From storyboard, prepare rough Study Guide -- use xerox of photos, diagrams, graphs, etc. and paste up a rough draft.
10. With materials assembled and rough Study Guide available -- rehearse the minicourse with participants in your subject field. Talk your way through the Study Guide. Note rough spots and places where extra cues are needed. INVOLVE THE STUDENT - talk with him, not at him. Tutor him through the materials and Study Guide. Practice as necessary.
11. Redo the previous step only with a tape recorder running this time.
12. Have minicourse evaluated by a group of participants who have not reviewed it before -- in GROUPS and INDIVIDUALLY -- later with students.
13. Collect reviews -- discuss problems directly with reviewers.
14. Make final revisions.
15. Take minicourses back to your school and continue tryout or implement.

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ABBREVIATED SCHEDULE
E.P.D.A. SUMMER INSTITUTE
1974

Sunday, June 2

5:00 P.M. Get Acquainted Hour and Kick-off Dinner

Monday, June 3

8:00 A.M. Introduction to the Institute (large group presentation)
8:30 A.M. "Introduction to Instruction Technology" (Filmstrip/Audio Tape)
9:00 A.M. What is a System? (discussion)
10:30 A.M. "The Audio-Tutorial Approach to Learning" (film)
1:00 P.M. Audio-Visual Equipment and Services (demonstration)
2:00 P.M. Mastery Learning and Evaluation (discussion)
3:30 P.M. An Instructional Development Model (lecture)
4:15 P.M. Small Group Session

Tuesday, June 4

8:00 A.M. "Minicourses - What Are They?" (self-instruction)
9:00 A.M. Storyboarding (demonstration)
9:30 A.M. Writing Instructional Objectives (multiple track approach)
11:00 A.M. Develop Your Objectives for Minisourse (activity)
1:00 P.M. Small Group Meetings to Review Your Objectives
2:00 P.M. Constructing Criterion-Referenced Test Items (multiple track approach)
3:00 P.M. Design Your Criterion Items for Minicourse (activity)

Wednesday, June 5

8:00 A.M. Description of Student Populations (panel discussion)
9:00 A.M. Selection of Media and Instructional Activities (lecture)
10:00 A.M. Sequencing of Instruction (self-instruction)
11:00 A.M. Storyboard Your Activities with another participant
2:00 P.M. Preparation of Rough Study Guides (demonstration)
3:00 P.M. Preparation of Audio Tapes (demonstration)

Thursday, June 6

8:00 A.M. Rehearse Your Minicourse with an Instructor (activity)
1:00 P.M. Student Tryout of Minicourses (demonstration)
2:00 P.M. Simulated Student Tryout (activity)
4:00 P.M. Finalize Your Minicourse (activity)

Friday, June 7

8:00 A.M. A-T at Burlington County College (slide presentation)
9:00 A.M. The Multi-Tracked Minicourse (lecture)
10:00 A.M. Set Up Your Minicourse for Evaluation (activity)
1:00 P.M. Evaluation of Minicourses (activity)